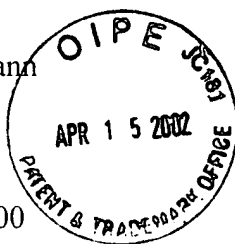


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Martin Starzmann

Serial No. : 09/463,598

Filed : January 27, 2000



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REMARKS

In the Office Action mailed January 3, 2002, the Examiner has withdrawn the objection to claims 2-12 because of the informalities in view of the applicant's amendments submitted October 11, 2001. The Examiner has also withdrawn the rejection of claims 1-12 under 35 U.S.C. 112, second paragraph, in view of the applicant's amendments submitted October 11, 2001. The Examiner has withdrawn the rejection of claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Hoenke et al., United States Patent No. 5,132,035 in view of the applicant's amendments submitted October 11, 2001. Applicant appreciates the Examiner's withdrawal of these objections and rejections.

The Examiner has rejected claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Miller et al., United States Patent No. 5,242,621. Applicant respectfully traverses this rejection. As the Examiner states on page 3 of this Office Action, no examples of a coolant containing all of the instantly claimed components is disclosed. Instead, Miller et al. discloses conventional antifreeze components, especially ethylene glycol. The disadvantage with ethylene glycol is its high toxicity, making it a potential environmental risk. Applicant's invention uses alkali salts of acetic acid and/or formic acid as antifreeze components in an aqueous solution. Such fluid composition exhibits all the antifreeze advantages of conventional glycol-water mixtures, but it does not exhibit their toxicity. However, these fluid compositions are strong ionic solutions, and therefore, it is important to have effective corrosion protection. Applicant's invention discloses that a corrosion inhibitor in the form of a mixture of C5-C16 monocarboxylic acid or alkali-, ammonium- or amino salts of said acid, a C5-C16 dicarboxylic acid or alkali-, ammonium- or amino salts of said acid, and a triazole provides excellent corrosion protection and, in addition, provides excellent heat transfer between a metal

surface and the fluid. This is illustrated by the tests in applicant's specification. The combination of mono- and di-carboxylic acids or their salts is believed to provide a synergistic effect with respect to the corrosion inhibition of metal surfaces. Conventional corrosion inhibitors are film-forming, thus creating a mechanical barrier on the metal surfaces, but the film prevents optimal heat transfer between the film and the metal surfaces. The corrosion inhibitor according to applicant's invention acts in a different way and does not form a barrier film on the metal surfaces.

Miller et al. does not deal with the problem of providing a glycol-free antifreeze heating or cooling fluid with improved heat transfer properties. No indication is given in Miller et al. about the specific combination claimed in the present invention. Thus, applicant believes that the present invention as disclosed and claimed cannot be regarded to be obvious over Miller et al. Applicant respectfully requests that this rejection of claims 1-12 as being unpatentable over Miller et al. be withdrawn.

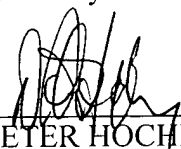
Applicant states that the invention has become a commercial success and is sold under the trademark Temper® as a glycol-free heat transfer fluid which is non-toxic, environmentally compatible, has high corrosion protection and high thermal transfer properties. A brochure describing the product including its mechanism of corrosion protection of the product is enclosed. Applicant also encloses a reference list citing installations using Temper®.

In the specification, applicant has amended the third complete paragraph on page 2 to make the text more accurately reflect the invention claimed. No new matter has been added. Applicant respectfully requests that the Examiner allow the application. If the Examiner has any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

Date: April 3, 2002

DPH/KRV
Attached: Marked Up Specification
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Martin Starzmann
Serial No. : 09/463,598
Filed : January 27, 2000
Title : FROST RESISTANT HEATING/COOLING FLUID
Art Unit : 1751
Examiner : Derrick G. Hamlin
Attorney Docket: GP7287US (#90225)

ATTACHMENT TO AMENDMENT

MARKED UP SPECIFICATION SHOWING CHANGES RELATIVE TO THE ORIGINAL VERSION

Please replace the third complete paragraph on page 2 with the following:

The heating/cooling fluid contains between 0.4 and 10 weight-%, preferably between 0.5 and 2 weight-% of the above-mentioned corrosion inhibitor, calculated on the [total] weight of the [alkali salts of acetic acid and/or formic acid] fluid.

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